



**National Centre for Photovoltaic Research and Education (NCPRE)**

**Three day CEP course on**

**C-Si Solar Cells and Modules: Theory, Fabrication and Characterization**

**September 11<sup>th</sup>–13<sup>th</sup>, 2013**

**Venue:**

**Seminar Hall, 2<sup>nd</sup> Floor**

**Victor Menezes Convention Centre (VMCC)**

**IIT Bombay**



**Indian Institute of Technology, Bombay (IITB)**

# C-Si Solar Cells and Modules: Theory, Fabrication and Characterization

**Day 1**  
11<sup>th</sup>September, 2013

Time	No	Title	Speaker
9:00 - 9:30		<i>Course Registration and Course Material Distribution</i>	
9:30 -10:00		<b>Course Inauguration</b>	
9:30 - 9:40		Welcome and brief introduction to NCPRE	Prof.Fernandes/Chetan IIT Bombay
9:40 - 9:50		Introduction to Education Programs under NCPRE	Prof. Pratibha Sharma IIT Bombay
9:50 - 10:00		Introduction to the workshop	Prof. Anil Kottantharayil , IIT Bombay
10:00 - 11:30	<b>1</b>	Fundamentals of Solar Energy Conversion	Prof. JuzerVasi, IIT Bombay
11:30 –12:00		<i>Tea break with informal discussion on previous lectures</i>	
12:00 - 13:00		Fundamentals of Solar Energy Conversion (continued)	Prof. JuzerVasi, IIT Bombay
13:00 - 14:00		<i>Lunch</i>	
14:00 - 15:30	<b>2</b>	Loss mechanisms	Prof. Chetan Solanki, IIT Bombay
15:30 - 16:00		<i>Tea break with informal discussions on previous lectures</i>	
16:00 - 17:30	<b>3</b>	Strategies for Improvement	Prof. Chetan Solanki, IIT Bombay

**Day 2**  
**12<sup>th</sup> September, 2013**

Time	No	Title	Speaker
9:30–11:00	4	Characterization of Cells and Materials	Prof. B.M. Arora, IIT Bombay
11:00 –11:30		<i>Tea break with informal discussions</i>	
11:30 - 13:00		Characterization of Cells and Materials (continued)	Prof. B.M. Arora, IIT Bombay
13:00 - 14:00		<i>Lunch</i>	
14:00 - 15:30	5	Silicon: Material properties and wafer production	Prof. Anil Kottantharayil, IIT Bombay
15:30 - 16:00		<i>Tea break with informal discussions</i>	
16:00 - 17:30	6	Crystalline Silicon Solar Cell: Process and Production Technology Overview	Mr. Prakash Suratkar, Tata Power Solar, Bangalore

**Day 3**  
**13<sup>th</sup> September, 2013**

Time	No	Title	Speaker
9:00 - 10:30	7	Module Manufacturing Technology	Mrs. Vasanthi Sreeram, Webel Solar, Kolkata
10:30 - 11:00		<i>Tea break with informal discussion on previous lectures</i>	
11:00 - 12:30	8	Module reliability assessment: techniques and insights	Prof. Govindasamy Tamizhmani, Director, PV Reliability Laboratory, Arizona State University
12:30 - 13:30		<i>Lunch</i>	
13:30 – 14:30	9	Module Testing and Certification	Mr. C. S. Kamalaksha, TUV Rheinland (India), Bangalore
	10	Lab Visit: Visit to lab and inspection of fabrication and characterization tools used for solar cell fabrications.	Dr. Diksha Makwani, NCPRE

**Registration Details:**

There is limited number of seats for the course. Participants are required to confirm their registration by sending the completed Registration Form, along with the fee to the Course Coordinator address. The fees must be paid by demand draft in favour of “Registrar IIT Bombay - CEP Account”.

**Fee Structure:**

Category	Amount	Duration of Course
Industry/ Individual	Rs. 15,000	3 Days
Academic/Institution from India	Rs. 10,500	3 Days
Student from India	Rs. 3,000	3 Days

The fee includes course material, lunch and refreshments.

A confirmation email will be sent after we receive the demand draft. If you do not hear from us for over 7 days, please track your courier. Please drop us an email at [ncpre@iitb.ac.in](mailto:ncpre@iitb.ac.in) only if the post has reached us and you have not heard from us. Your registration is complete only after we receive your demand draft and the registration form.

Kindly send the demand draft by **speed post/courier** to the **address of the course coordinator** given below:

**Course Coordinator:****Prof. Anil Kottantharayil**

Department of Electrical Engineering  
Indian Institute of Technology Bombay  
Powai, Mumbai-400 076

**Deadline for submitting the Registration Form and Fees is 10<sup>th</sup> August, 2013.**

**Travel support for students:** TA will be provided to student participants on prior request during registration. The support is limited to the sleeper class fare only.

**Accommodation:**

Accommodation is available in the institute hostel or guest house/similar facility for limited number of participants on payment as per actual by the individuals. Kindly let us know at the time of registration if you would need accommodation.

Please contact the following for all queries related to registration and accommodation:

**Registration:****Mrs. Smita Bhattacharjee**Email: [smita98@iitb.ac.in](mailto:smita98@iitb.ac.in)

Contact No: 02225764476

**Accommodation:****Mr. Ajay P Jadhav**Email: [ajayjadhav@iitb.ac.in](mailto:ajayjadhav@iitb.ac.in)

Contact No: 09821498899

More details: <http://www.ncpre.iitb.ac.in/events.php>